

FACULTY OF INFORMATION TECHNOLOGY
UNIVERSITI UTARA MALAYSIA

**EDUCATION MANAGEMENT
INFORMATION SYSTEM (EMIS):
REQUIREMENTS ENGINEERING TOWARDS
A WEB-BASED SYSTEM**

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**EDUCATION MANAGEMENT
INFORMATION SYSTEM (EMIS):
REQUIREMENTS ENGINEERING TOWARDS A WEB-BASED
SYSTEM**

A dissertation submitted in partial fulfilment of the requirements for the award of
the degree of Master of Science (Information & Communication Technology) in the
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ABSTRAK

Sistem Maklumat Pengurusan Pendidikan (EMIS) ialah sistem teragih yang mana telah dibangunkan oleh Kementerian Pelajaran Malaysia (KPM). Ianya boleh di takrifkan sebagai alat untuk memungut data peringkat sekolah yang mana ia digunakan untuk perancangan dan kajian untuk jangka masa panjang dan pendek. Pengendaliannya melibatkan empat peringkat, iaitu sekolah, daerah, negeri dan KPM. Walau bagaimanapun pengendaliannya di peringkat bawah seperti sekolah, Pejabat Pelajaran Daerah (PPD) dan Jabatan Pelajaran Negeri (JPN) mempunyai banyak kelemahan. Kelemahannya banyak tertumpu kepada keperluan pengguna. Oleh itu, kajian ini menggunakan Kejuruteraan Keperluan (RE) untuk mengkaji keperluan pengguna. Objektif kajian ini ialah membina dokumentasi secara sistematik dengan menggunakan model Unified Modeling Language (UML). Dokumentasi ini sangat penting dalam memastikan kejayaan dan kesinambungan EMIS. Selain menggunakan dokumentasi UML untuk mendapatkan keperluan pengguna, kajian ini juga akan membuat pengesahan keperluan dengan menggunakan kaedah prototaip. Kajian ini menumpukan kepada dokumentasi ke arah pembinaan sistem EMIS berasaskan web. Sebagai tambahan, Tujuan kajian ini adalah untuk membuktikan kepada peringkat atasan bahawa untuk membina semula EMIS perlulah ditumpukan kepada semua keperluan bukan hanya kepada satu atau dua keperluan sahaja. Dengan dapatan daripada kajian ini juga akan dapat memberi sumbangan yang berharga dalam proses pembinaan EMIS yang lebih baik. Ianya juga dapat memberi panduan atau idea dalam mendokumentasikan sesuatu keperluan pengguna.

ABSTRACT

Education Management Information System (EMIS) is a distributed system developed by the Malaysian Ministry of Education (KPM). It is a tool used for collecting school data for supporting short and long term plannings, and educational researches. This system involves four levels: school, district, state and KPM. EMIS implementation at the school, district, and state level has encountered a lot of problems, especially those related to user requirement. Most of current EMIS processes involves users at the school, district, and state level. Hence, the study specifically focussed on users need and the use of Requirements Engineering (RE) to rectify these problems. The objective of the study is to systematically document the new web-base system by using Unified Modelling Language (UML). Documenting the system requirement is very important in ensuring the success and continuity of the system. The study utilized prototyping as tools to obtain requirements validation. In addition, findings of the study also prove to top management the need to focus on the overall requirements instead of just a selected few. Apart from this, the importance of documentation in developing EMIS was also highlighted to the management. It gives guidance and idea for documenting requirements.

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To my wife Zawiyah binti Harun,
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LIST OF ABBREVIATIONS

API	Application Programmer Interfaces
CASA	Computer Assisted System Administration
EMIS	Education Management Information System
EPRD	Education Planning and Research Division
FISU	Financial Information System
HIID	Havard Institute for International Development
ICT	Information and Communication Technology
IS	Information System
IT	Information Technology
JAD	Joint Application Development
JPN	State Education Department/Jabatan Pelajaran Negeri
KPM	Malaysian Ministry of Education/Kementerian Pelajaran Malaysia
MIS	Management Information System
OMPD	Database Processes Operator/Operator Memproses Pengkalan Data
PKS	Short Term Staff/Pekerja Khidmat Singkat
PPD	District Education Office/Pejabat Pelajaran Daerah
RE	Requirements Engineering
RISC	Reduced Instruction Set Computer
SK	National Type School/Sekolah Kebangsaan
SMK	National Type Secondary School/Sekolah Menengah Kebangsaan
SRS	Software Requirement Specification
UML	Unified Modelling Language

CHAPTER 1

BACKGROUND OF THE STUDY

1.1 Introduction

EMIS stands for Education Management Information System, is a structured scheduled, and managed system for the collection, processing, storage, retrieval, and dissemination of data and information required to support the main activities of education managers and decision makers in the Ministry of Education (KPM), State Education Departments (JPN), Educational Districts (PPD) and schools. These include but not limited to: administration, planning, monitoring and control of project and program implementation, research policy analysis, decision making, and domestic, regional, and global communications.

An EMIS is a set of formalized and integrated operational processes, procedures, and cooperative agreements by which data and information about schools and

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